Policy Forum ■

Integrated Computerized Records Provide Improved Quality of Care with Little Loss of Privacy

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My position is that it will be necessary for us to give up some privacy to maximize the benefits of a computerized medical record. Even as we lose some privacy by having our telephone numbers printed in telephone books or by having our addresses, telephone numbers, and e-mail addresses printed in the American Medical Informatics Association (AMIA) directory, we also gain some benefit. Having a computerized and integrated medical record will require some loss of privacy, I believe. However, I assert that the current medical record is not nearly as private as many people surmise. With a computerized medical record, at least we will be able to assess who looked at a medical record and we will have some measure of the loss of privacy. With the current paper record systems, we are unable to determine who reviews a medical record because almost anyone with a white laboratory coat (at least in our hospital) can walk to a floor, pull a patient record, and review the information.

I come from an institution (LDS Hospital) where we have worked very hard to knock down barriers to communicating data between different departments within the hospital (Fig. 1).[1] As a result of these efforts, we now routinely share data acquired by

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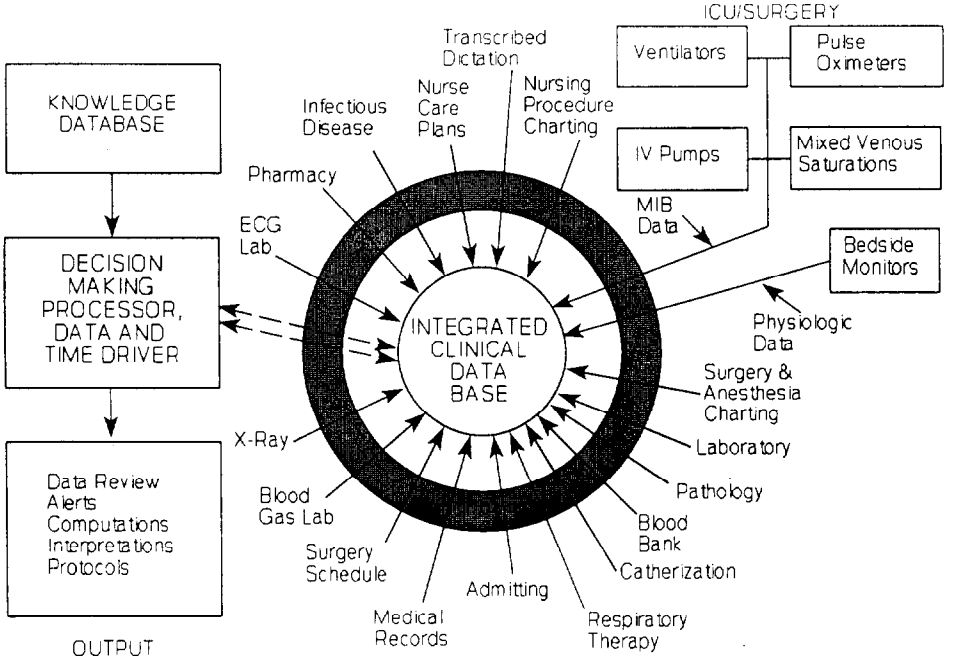

Figure 1 Schematic block diagram of the HELP system operational at LDS Hospital. The central database is shown in the middle. Data flow from many clinical sources is shown by the inward-pointing arrows. As the data flow into the database, they pass through the dark "stippled" area. This area is a schematic of the "data" drive capability of the HELP decision support system. As the data flow in from the various sources, knowledge from the system's expert system is applied to those data to determine whether alerts or therapeutic suggestions should be made. Reproduced with permission from Gardner RM. The HELP clinical decision-support system. J Med Practice Management. 1994;9:177–81.

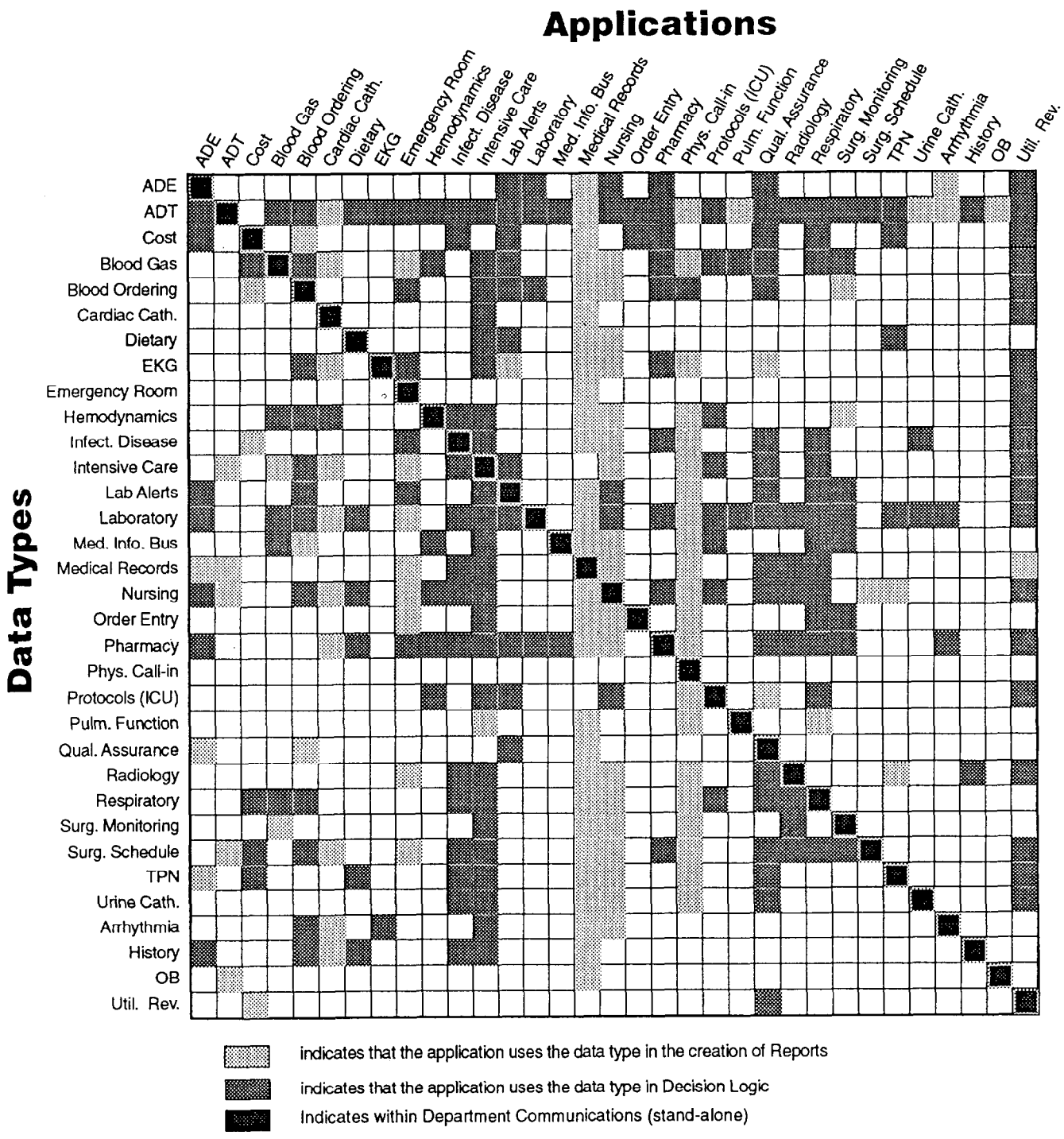

Figure 2 HELP system data integration chart. If each departmental application needed only data from a "stand-alone" departmental system, only the "black" blocks along the diagonal line would be needed. However, as can be seen, there are several applications that need data types from other departments—the "stippled" blocks off the diagonal line.

nurses, intensive care, laboratory, radiology, pharmacy, and a variety of other sources. All of these groups enter data into our integrated database. We have found that integrated data from a wide variety of sources in a computerized medical record have been worth "more than the sum of the parts." Figure 2 shows how important it is to have data integrated so that computers *and* physicians can optimally use

the patient data for clinical decision making. For example, by having demographic data about a patient (age, sex, height, and weight) as well as the medications and laboratory data, we can provide much more accurate and helpful alerts to pharmacists, laboratory staff, and physicians. In fact, as we have looked at our clinical application of computers, we have found that virtually every clinical department needs data from at least one other department, and perhaps as many as 15 other departments!

Currently, clinical records are not very private. Today, you can send to the Medical Information Bureau* in Boston and get a considerable amount of your own medical information. Although the Medical Information Bureau asks that you include your Social Security number when you request information you are not required to do so. I was hospitalized about two years ago and sent an inquiry to the Medical Information Bureau. I received a letter back indicating that the bureau had little medical data about me. However, according to the bureau, I was but one of the 15% of applicants for whom it didn't have information. Restated, this bureau has medical data for 85% of the population of the United States. So there's a tremendous amount of information already in the "public domain" and available to "authorized" persons and organizations.

We need to link medical records. In my opinion, linking patient clinical data provides individual care benefits that outweigh the potential for a minor loss of patient privacy. For example, better individual care can be given if we provide linkages about allergies to a pharmacy system. We can eliminate redundant history taking, examinations, and laboratory tests, thereby allowing better tracking of patients through the care process. For example, my son, who is a fourth-year medical student, made a lot of money last summer by repeating histories and physical examinations of patients just before short-stay surgery because it was too difficult to get the needed information from the physicians' offices to the hospital. Such a redundant process is a waste in the health care system that needs to be fixed. To fix the problem, prompt and accurate patient identification and an electronic linkage between hospitals and physicians are needed. In addition, in order for us to better understand patient care and outcomes, we must link patient and outpatient records. Next, we must be able to link patient records in larger geographic areas, beginning with community health information networks.

AMIA took a position after the ACMI meeting last spring that accepted the Social Security number as patient identifier even though it has faults.[2] Anyone who thinks that creating a new, general health security number is a trivial task should think again. If we gave every person in the United States a new "identification" number and conservatively estimated a cost of three dollars per person, the project would cost one-billion dollars. If our government did it, I'm sure it would take at least five years. Almost all American citizens and residents have Social Security numbers now. In addition, a recent Harris Poll showed that the public is not terribly worried about use of the Social Security number as a health care identifier. That poll makes the comment that "More people would prefer to have their Social Security number used rather than have a separate health insurance number."[3]

We should begin to build the computerized medical record using simple and practical concepts and privacy strategies. We can then move to the more complex access strategies in the future. At this point, we in the medical informatics field do not understand all of the issues. For example, it is simple to say, "Well, I'm going to restrict access to the attending physicians and the nurses caring for the patient." However, if the patient care process requires fast response, patient care can be compromised because the appropriate medical and nursing staff do not have access to patient data. Who will be the "gatekeeper"? This is a complex question and one that does not have to be addressed with the current paper record since it is an open record.

*The address for the Medical Information Bureau, Inc. (MIB Inc.) is P.O. Box 105, Essex Station, Boston, MA 02112. The phone number is (617) 426-3660.

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